



C09-M-606C

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BOARD DIPLOMA EXAMINATION, (C-09)

APRIL/MAY—2015

DME—SIXTH SEMESTER EXAMINATION

ENERGY SOURCES AND POWER PLANT ENGINEERING

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the necessity of alternate sources of energy?
2. Explain the principle of photovoltaic cell.
3. Write any four important considerations for selecting site for installing windmill.
4. What are the advantages and disadvantages of a fuel cell?
5. What is a biogas? State any two applications of biogas.
6. List the factors to be considered for selection of site for tidal power plant.
7. List various materials used for biogas generation.
8. State the importance of water treatment in steam power plant.

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9. Distinguish^{*} between nuclear fission and nuclear fusion.
10. List various effects of nuclear radiation.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw a neat sketch of natural circulation solar water heater and explain its working.
12. Describe the construction and working of a vertical axis windmill with a neat sketch.
13. (a) State the advantages and limitations of MHD generator.
(b) State the application of fuel cell.
14. Explain the working principle of floating-type digester with a neat sketch.
15. (a) What is a tide?
(b) List out the components of the tidal power plant.
(c) Write the advantages and disadvantages of tidal power plant.
16. Draw a layout of steam power plant and explain the functions of major components.
17. Explain the following with neat sketches : 2+(4+4)=10
(a) Gas cooled reactor power plant
(b) Liquid metal cooled reactor power plant
18. Write short notes on the following : 2½+2½+5=10
(a) Solar space heater
(b) Solar space cooling
(c) Nuclear reactor
